

[DEEP TRENCH CAPACITOR AND METHOD OF FABRICATING THE SAME]

Abstract

A method of fabricating a deep trench capacitor is described. A substrate having a deep trench therein is provided. A doped region is formed in the substrate at the bottom of the deep trench, a dielectric layer is formed on the bottom surface of the deep trench, and a first conductive layer is formed on the dielectric layer. A collar oxide layer is formed on sidewalls of the deep trench that are not covered by the first conductive layer. A material layer is formed covering the first conductive layer and exposing a portion of the collar oxide layer. The exposed collar oxide layer is removed to expose the substrate. Then, the material layer is removed, and a second conductive layer is formed in the deep trench covering the first conductive layer and the collar oxide layer. In this invention, only the second conductive layer is formed on the first conductive layer for electrically connecting the capacitor and an active device, hence the method is simpler.